

RABIES BULLETIN EUROPE

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CONTENTS

1	Editorial.....	3
2	Summary of Rabies Cases in Europe.....	4
3	Miscellaneous Articles	5
3.1	Imported Human Rabies Case in Switzerland, 2012	5
3.2	World Health Organization (WHO) International Expert Consultation on rabies in Geneva	8
4	Distribution of Rabies in Europe	10
	Country summaries of rabies cases, 3rd quarter 2012	10
4.1	Rabies cases per country and administrative units, 3rd quarter 2012	11
4.2	Trend tables	17
4.2.1	Comparison of the reporting quarter (III/2012) with the previous quarter (II/2012)	17
4.2.2	Comparison of the reporting quarter (III/2012) with the same quarter of the previous year (III/2011)	18
	List of Contributors	19
	Map of rabies cases in Europe, 3rd quarter 2012.....	25

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1 Editorial

The rabies data for the 3rd quarter of 2012 is presented in tables and a map.

The first article is a case report on an imported human rabies case in Switzerland. The U.S. citizen died after being hospitalized and sequence analysis of the rabies virus revealed an association to insectivorous bats in the Americas.

A World Health Organization (WHO) International Expert Consultation on rabies was held at WHO's headquarters in Geneva, Switzerland, on 18–20 September 2012. The second article by Dr. Meslin gives an overview of the topics discussed. Countries endemic for canine rabies were urged to initiate and strengthen their rabies prevention and control activities, and to increase the level of awareness about the disease, particularly among children.

Conrad Freuling
Thomas Müller

2 Summary of Rabies Cases in Europe

RABIES CASES

3rd QUARTER 2012

01.07.12 - 30.09.12

Name	Code	Total	Wildlife	Domestic animals	Bats	Human
Albania	ALB	2		2		
Austria	AUT					
Belarus	BLR	114	60	53	1	
Belgium	BEL					
Bosnia - Hercegovina	BIH	1	1			
Bulgaria	BGR					
Croatia	HRV	61	49	12		
Cyprus	CYP					
Czech Republic	CZH					
Denmark	DNK					
Estonia	EST					
Finland	FIN					
France	FRA	8			8	
Germany	DEU	8			8	
Greece	GRC					
Hungary	HUN	1			1	
Iceland	ISL					
Ireland	IRE					
Italy	ITA					
Latvia	LVA					
Lithuania	LTU					
Luxembourg	LUX					
Macedonia	MKD					
Malta	MLT					
Moldova	MDA	36	6	30		
Montenegro	MNE					
Norway	NOR					
Poland	POL	68	61	6	1	
Portugal	PRT					
Romania	ROU	70	40	30		
Russian Federation	RUS	395	245	150		
Serbia	SRB					
Slovak Republic	SVK					
Slovenia	SVN					
Spain	ESP	2		2		
Sweden	SWE					
Switzerland + Lichtenstein	CHE	1				1
The Netherlands	NED	4			4	
Turkey	TUR	146	6	140		
Ukraine	UKR	421	178	243		
United Kingdom	UNK					
TOTAL		1338	646	668	23	1

Wildlife: excluding bats

3 Miscellaneous Articles

3.1 Imported Human Rabies Case in Switzerland, 2012

Deubelbeiss, AN^{1b}, Trachsel, C^{2b}, Bachli, EB², Kuffer, A³, Budka, H³, Eniseyskiy, P⁴, Zimmermann, H⁵, Wallace, RM⁶, Farley, S⁷, Zanoni, RG^{1a}

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Background

Human rabies is rare in Western Europe. The last three indigenous human rabies cases in Switzerland due to the fox rabies epidemic were recorded in 1977 (WHO, 1977; Gräni et al., 1978; Hohl et al., 1978). Also in North America, either indigenously acquired, bat-derived rabies or imported rabies cases in humans are rare events (CDC, 2008a; Eidson et al., 2011; Prasek et al., 2012; Javaid et al., 2012). Therefore, rabies as a differential diagnosis in patients exhibiting progressive encephalitis with unknown etiology might be considered with delay or missed.

Clinical course

On July 5, 2012, the 34 year old patient, a U.S. citizen, returning to his job in Basra, Iraq, presented at an outpatient clinic with pain in his right arm and shoulder which had increasingly troubled him since June 25. Therefore, the patient's estimated infectious period began on June 11. He lived in California, USA, from January 2012 until May 2012 visiting family members there for the last time from June 14 to 18, 2012. Since his condition deteriorated over subsequent days, he travelled by air to the City Hospital in Dubai on July 8, where he was transferred to the intensive

care unit and intubated soon after due to generalized rigor, delirium, myoclonic seizures and suspected encephalitis. The patient was given analgesics and sedatives but remained in a persistent coma after sedation was stopped. Malignant neuroleptic syndrome was considered as principal differential diagnosis with indication of brain death. The patient was transferred to a hospital in Switzerland on July 29, 2012. A serum sample was collected on July 29 for the detection of antibodies to Japanese encephalitis virus, West-Nile virus and rabies virus, as another remote differential diagnoses. The patient died on July 31, 2012.

Diagnosis

The first distinct indication for rabies diagnosis was a rabies neutralizing titre of 1: 497 corresponding to 11.2 I.U./ml in RFFIT released on August 08, 2012. The anamnestic follow-up of the patient's vaccination history revealed the absence of pre-exposure rabies vaccination, thus confirming the diagnosis of rabies. Rabies was then also confirmed by FAT using the frozen native brain samples of cerebellum and both cerebral hemispheres on August 22. Immunohistochemistry performed on paraffin sections of the brain

demonstrated prominent immunoreactivity with large Negri bodies in neuronal somata in addition to smaller granular bodies and immunolabeled cell processes. RT-PCR using brain suspension revealed a strongly positive result on August 24. Phylogenetic analysis of the sequence of the 543 bp nucleotide fragment showed its close relationship to classical rabies virus strains (genotype 1) circulating in *Tadarida brasiliensis* insectivorous bats in the Americas.

Public health investigation

Exposure criteria were defined as open wound or mucous membrane exposure to the patient's saliva, tears, CSF or neural tissue during the presumed infectious period. For the investigation of contacts abroad, the employer, hospitals and the transport company, which transferred the patient to Switzerland, were notified. CDC revealed 39 potentially exposed contacts in USA, Thailand and Iraq, 7 of whom received PEP due to concern about contact with potentially infectious saliva or tears (Farley et al., 2012). Interviews with family members and staff at the Swiss hospital, external laboratories involved and the funeral home with possible exposure revealed 4 persons, 2 of whom were family members, who met the criteria for PEP in Switzerland. 13 contact persons, though not meeting the criteria for PEP were also offered a simple course of PEP without HRIG due to personal concern. The success of all PEPs was confirmed serologically on day 14 or 21 (Uwanyiligira et al., 2012).

Hindsight and Forethoughts

Rabies is not always suspected in human cases and particularly its paralytic form is considered as a diagnostic challenge (Hemachudha et al., 2002). As a consequence of unrecognized clinical rabies, a total of 16 fatal rabies cases have been

observed in the context of organ and tissue transplantations, out of which 9 cases followed cornea transplantation (CDC, 2008a; Masthi et al., 2012). As in the present case, transmission of rabies virus can occur from minor or unrecognized bites from bats (CDC, 2008a; CDC, 2011a). Insectivorous bats are currently the primary source of domestically acquired human rabies in the U.S., occurring with a frequency of 2-3 cases per year, at the most (CDC, 2011a; CDC, 2011b; CDC, 2011c). Also in Europe, at least 4 human rabies cases due to infection with European bat lyssavirus (EBLV-1 or EBLV-2, rabies-related genotypes 5 and 6) have to date been identified (King & Crick, 1988; Roine et al., 1988; Selimov et al., 1989; Fooks et al., 2002; Botvinkin et al., 2005) since its first detection in 1954 (Rabies Bulletin Europe, 1988). Rabies should be included in the differential diagnosis of any unexplained acute, rapidly progressive viral encephalitis (CDC, 2008b). In the current case rabies was a remote differential diagnosis for all hospitals involved. Due to the almost invariably fatal outcome of clinical rabies in human, the follow-up and postexposure prophylaxis of possible exposures is a medical urgency. As long as rabies symptoms are absent, rabies prevention by PEP is close to certain (Charlton et al., 1997; CDC, 2010; Wijaya et al., 2011).

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3.2 World Health Organization (WHO) International Expert Consultation on rabies in Geneva

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A World Health Organization (WHO) International Expert Consultation on rabies has urged countries endemic for canine rabies to initiate and strengthen their rabies prevention and control activities, and to increase the level of awareness about the disease, particularly among children. Around 70 participants attended consultation held at WHO's headquarters in Geneva, Switzerland, on 18–20 September 2012.

A re-assessment of the burden of rabies made during the meeting showed that more than 50,000 people, mostly in Africa and Asia, still die in spite of 20 million others receiving post-exposure prophylaxis (PEP) worldwide. Data also show that the majority of fatal cases involve people from poor, rural communities without access to dog bite management centres and rabies biologicals. Also, too many PEP delivered in the world today are not administered to the right people. Thus rabies remains a neglected disease of poor and vulnerable populations.

The main obstacle to assessing the incidence of the disease is under reporting and misdiagnosis of human rabies cases. The disease occurs mainly in remote rural communities where PEP is not accessible and where effective measures to prevent the disease in its major animal host – the dog – are not implemented. Under-reporting prevents mobilization of resources and undermines implementation of control and

prevention measures, such as dog vaccination.

"Endemic countries should strengthen their capacity to implement control and elimination programmes," said Dr Lorenzo Savioli, Director of the Department of Control of Neglected Tropical Diseases. Although progress has been made at the international and national levels in breaking the cycle of rabies neglect through assertive advocacy, much remains to be done in promoting the use of existing tools and strategies to eliminate this disease from entire WHO regions. Raising disease awareness among populations at risk, particularly children, is crucial to eliminating this vaccine-preventable disease."

Other important issues discussed included:

- new recommendations for pre- and post-exposure prophylaxis (the need for local treatment of a suspected dog-induced wound immediately after exposure and the application of a course of potent and effective WHO-recommended rabies vaccine);
- design of comprehensive dog and wildlife rabies control programmes;
- classification of rabies and other lyssaviruses;
- laboratory diagnosis of rabies in humans and animals;
- review of the rabies situation in domestic and wild animals in endemic countries, and the estimated health and economic burden of the disease;
- management of rabid patients;

- rabies biological products for humans and animals.

The meeting discussed novel approaches for applied research on the health economics of dog vaccination for human rabies prevention, and the sustainability and cost-effectiveness of such programmes in various cultural, ecological and economic settings. Such research could also include an analysis of the socioeconomic challenges to implementing programmes as well as the potential for integrating dog rabies control with other dog-borne zoonoses such as echinococcosis and leishmaniasis. It also recommended that national rabies control programmes involve the animal and public health sectors as well as other sectors such as education, local government, police and civil society, particularly animal welfare and conservation associations.

In recent years, a number of rabies control and elimination pilot programmes carried out in Africa, Asia and Latin America have achieved a sustained reduction in human rabies cases through mass vaccination of dogs. In a number of urban areas, particularly in India, vaccination coupled with sterilization of dogs has resulted in local elimination of rabies in both humans and animals.

The Consultation also urged WHO to continue to advocate human rabies prevention through the elimination of rabies in dogs and to promote a wider use of the intradermal route for PEP, which reduces volume and the cost of cell-cultured vaccine by 60% to 80%.

WHO's target, as outlined in its NTD roadmap (published in January 2012) is to eliminate human and dog rabies in all Latin American countries by 2015 and human rabies transmitted by dogs in South-East Asia by 2020.

The report will be published in the Technical Report Series (TRS) as the 2nd report of the WHO Expert Consultation on Rabies at the end of the first quarter 2013.

4 Distribution of Rabies in Europe

Country summaries of rabies cases, 3rd quarter 2012

01.07.12 - 30.09.12

Country		Domestic animals									Wildlife														bat	Human cases	total	
		dog	cat	cattle	equine	goat	sheep	pig	stray dog	other	subtotal	fox	raccoon	dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer				other
Name	Code																											
Albania	ALB	2									2															0		2
Austria	AUT *										0															0		0
Belarus	BLR	19	19	12		2		1			53	43	14				1				1				1	60	1	114
Belgium	BEL *										0															0		0
Bosnia - Hercegovina	BIH										0	1														1		1
Bulgaria	BGR *										0															0		0
Croatia	HRV	1	3	8							12	47									2					49		61
Cyprus	CYP *										0															0		0
Czech Republic	CZH *										0															0		0
Denmark	DNK *										0															0		0
Estonia	EST *										0															0		0
Finland	FIN *										0															0		0
France	FRA										0															0	8	8
Germany	DEU										0															0	8	8
Greece	GRC *										0															0		0
Hungary	HUN										0															0	1	1
Iceland	ISL *										0															0		0
Ireland	IRE *										0															0		0
Italy	ITA *										0															0		0
Latvia	LVA *										0															0		0
Lithuania	LTU *										0															0		0
Luxembourg	LUX *										0															0		0
Macedonia	MKD *										0															0		0
Malta	MLT *										0															0		0
Moldova	MDA	9	5	16							30	4							2							6		36
Montenegro	MNE *										0															0		0
Norway	NOR *										0															0		0
Poland	POL	3	2	1							6	53	1				1	5	1							61	1	68
Portugal	PRT *										0															0		0
Romania	ROU	11	11	7	1						30	38									2					40		70
Russian Federation	RUS	41	70	24		2	4	9			150	187	35				1	1	4	3	1			1	12	245		395
Serbia	SRB *										0															0		0
Slovak Republic	SVK *										0															0		0
Slovenia	SVN *										0															0		0
Spain	ESP	2									2															0		2
Sweden	SWE *										0															0		0
Switzerland + Lichtenstein	CHE										0															0		1
The Netherlands	NED										0															0	4	4
Turkey	TUR	51	9	74	2	4					140	5													1	6		146
Ukraine	UKR	52	128	54	2	7					243	144	8			2	4	15							5	178		421
United Kingdom	UNK *										0															0		0
TOTAL		191	247	196	5	15	4	10	0		668	522	58	0	2	6	22	7	3	6	0	0	1	19	646	23	1	1338
PER CENT		14.3%	18.5%	14.6%	0.4%	1.1%	0.3%	0.7%	0.0%		49.9%	39.0%	4.3%	0.0%	0.1%	0.4%	1.6%	0.5%	0.2%	0.4%	0.0%	0.0%	0.1%	1.4%	48.3%	1.7%	0.1%	100%

* no cases

** no data

4.1 Rabies cases per country and administrative units, 3rd quarter 2012

01.07.12 - 30.09.12

Location	Domestic animals										Wildlife														bat	Human cases	total	
	dog	cat	cattle	equine	goat	sheep	pig	stray dog	other	subtotal	fox	raccoon	dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer	other				subtotal
ALBANIA																												
Kukes	2									2															0			2
TOTAL	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
PER CENT	100,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100%
BELARUS																												
Brest										0	4	3													7			7
Gomel	6	4	4							14	4	1													5	1		20
Grodno	4	4	2		1					11	7	1													8			19
Minsk	6	6	1							13	9	2				1				1				1	14			27
Mogilev	1	1						1		3	15	2													17			20
Vitebsk	2	4	5		1					12	4	5													9			21
TOTAL	19	19	12	0	2	0	1	0	0	53	43	14	0	0	0	1	0	0	1	0	0	0	0	1	60	1	0	114
PER CENT	16,7%	16,7%	10,5%	0,0%	1,8%	0,0%	0,9%	0,0%	0,0%	46,5%	37,7%	12,3%	0,0%	0,0%	0,0%	0,9%	0,0%	0,0%	0,9%	0,0%	0,0%	0,0%	0,0%	0,9%	52,6%	0,9%	0,0%	100%
CROATIA																												
Osjesko - Baranjska			6							6															0			6
Sibensko - Kninska										0	3														3			3
Sisacko - Moslovačka										0	2														2			2
Splitsko - Dalmatinska	1	1	2							4	18									2					20			24
Zagrebacka		2								2	24														24			26
TOTAL	1	3	8	0	0	0	0	0	0	12	47	0	0	0	0	0	0	0	2	0	0	0	0	0	49	0	0	61
PER CENT	1,6%	4,9%	13,1%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	19,7%	77,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	3,3%	0,0%	0,0%	0,0%	0,0%	0,0%	80,3%	0,0%	0,0%	100%
BOSNIA - HERCEGOVINA																												
* no region specified										0	1														1			1
TOTAL	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
PER CENT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	0,0%	100%
FRANCE																												
Bretagne										0															0	2		2
Centre										0															0	2		2
Lorraine										0															0	4		4
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8
PER CENT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	100%

4.2 Rabies cases per country and administrative units, 3rd quarter 2012 (continued)

01.07.12 - 30.09.12

Location	Domestic animals										Wildlife													bat	Human cases	total		
	dog	cat	cattle	equine	goat	sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer	other				subtotal	
GERMANY																												
Berlin-West,Stadt										0															0	4		4
Chemnitz,Stadt										0															0	1		1
Leipziger Land										0															0	1		1
Schleswig-Flensburg										0															0	1		1
Wittmund										0															0	1		1
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8
PER CENT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	100%
HUNGARY																												
Budapest										0															0	1		1
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
PER CENT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	100%
POLAND																												
Malopolskie										0	1														1			1
Podkarpackie	2	1	1							4	51				1	5	1								58			62
Podlaskie		1								1	1	1													2			3
Slaskie	1									1															0			1
Warminsko-Mazurskie										0															0	1		1
TOTAL	3	2	1	0	0	0	0	0	0	6	53	1	0	0	1	5	1	0	0	0	0	0	0	0	61	1	0	68
PER CENT	4,4%	2,9%	1,5%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	8,8%	77,9%	1,5%	0,0%	0,0%	1,5%	7,4%	1,5%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	89,7%	1,5%	0,0%	100%
SPAIN																												
Ciudad Autnoma de Ceuta	1									1															0			1
Ciudad Autnoma de Meilla	1									1															0			1
TOTAL	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
PER CENT	100,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100%
THE NETHERLANDS																												
Friesland										0															0	1		1
Groningen										0															0	1		1
Noord-Holland										0															0	1		1
Zuid-Holland										0															0	1		1
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
PER CENT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	100%

4.2 Rabies cases per country and administrative units, 3rd quarter 2012 (continued)

01.07.12 - 30.09.12

Location	Domestic animals										Wildlife															bat	Human cases	total
	dog	cat	cattle	equine	goat	sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer	other	subtotal				
ROMANIA																												
Arges										0									1						1			1
Bacau	1		1							2	1														1			3
Bihor										0	2														2			2
Bistrita-Nasaud	1									1	1														1			2
Botosani	1									1	1														1			2
Brasov										0	1														1			1
Buzau		3								3	5														5			8
Cluj										0	1														1			1
Dambovita				1						1	1								1						2			3
Dolj										0	1														1			1
Galati	5									5															0			5
Gorj										0	3														3			3
Harghita										0	2														2			2
Hunedoara		1								1															0			1
Ialomita		1								1															0			1
Iasi		3	1							4	3														3			7
Ilfov		1								1															0			1
Mures	1									1	1														1			2
Neamt										0	1														1			1
Olt										0	1														1			1
Prahova										0	1														1			1
Salaj	1		1							2															0			2
Satu Mare										0	2														2			2
Suceava			3							3	2														2			5
Teleorman										0	1														1			1
Valcea										0	4														4			4
Vaslui			1							1	1														1			2
Vrancea	1	2								3	2														2			5
TOTAL	11	11	7	1	0	0	0	0	0	30	38	0	0	0	0	0	0	0	2	0	0	0	0	0	40	0	0	70
PER CENT	15,7%	15,7%	10,0%	1,4%	0,0%	0,0%	0,0%	0,0%	0,0%	42,9%	54,3%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	2,9%	0,0%	0,0%	0,0%	0,0%	0,0%	57,1%	0,0%	0,0%	100%
MOLDOVA																												
Moldova	9	5	16							30	4						2								6			36
TOTAL	9	5	16	0	0	0	0	0	0	30	4	0	0	0	0	0	2	0	0	0	0	0	0	0	6	0	0	36
PER CENT	25,0%	13,9%	44,4%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	83,3%	11,1%	0,0%	0,0%	0,0%	0,0%	0,0%	5,6%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	16,7%	0,0%	0,0%	100%

4.2 Rabies cases per country and administrative units, 3rd quarter 2012 (continued)

01.07.12 - 30.09.12

Location	Domestic animals										Wildlife														bat	Human cases	total
	dog	cat	cattle	equine	goat	sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer	other	subtotal			
RUSSIAN FEDERATION																											
Adygeja resp.	1									1														0			1
Astrahanskja obl.	3	1	2					1		7													1	1			8
Belgorodskja obl.	1	5	2		1					9	9						1							10			19
Brjanskaja obl.	3	1								4	8	2												10			14
Cecenskaja resp.	1									1														0			1
Cuvasskaja resp.		2								2	3													3			5
Dagestan resp.		1	4							5														0			5
Ivanovskaja obl.		1								1	4	1												5			6
Jaroslavskaja obl.		2						1		3	14	3												17			20
Kabardino-Balkanskaja resp.	1							1		2														0			2
Kaliningradskaja obl.										0	2													2			2
Kalmykija resp.	1									1														0			1
Kaluzskaja obl.		3								3	3											1		4			7
Karacaevo-Cerkesskaja resp.								1		1														0			1
Kostromskaja obl.										0		1												1			1
Krasnodarskij kr.		3						1		4								1						1			5
Kurskaja obl.		5								5	6													6			11
Lipeckaja obl.	1	2					4			7	13													13			20
Mordovija resp.		2								2	3													3			5
Moskovskaja obl.	7	3	3					1		14	37	3				1								41			55
Moskva g.	1							1		2	4													4			6
Nizegorodskaja obl.	1	1								2	3													3			5
Orlovskaja obl.	1	1	3							5	2				1								2	5			10
Penzenskaja obl.	4	2						1		7	16													16			23
Pskovskaja obl.										0	2	3					1							6			6
Rjazanskaja obl.		1								1														0			1
Rostovskaja obl.		5	1							6	3	2						1						6			12
Samarskaja obl.	4	2								6	5													6			12
Saratovskaja obl.	1	1								2	7	1											1	8			10
Severnaja Osetija-Alanija resp.		2	4							6	1						1							2			8
Smolenskaja obl.	3	7	1							11	10	11						1	1				8	31			42
Stavropol'skij kr.	2	5								7														0			7
Tambovskaja obl.	1		1							2	15													15			17
Tul'skaja obl.	3	3	2		1			1		10	3	1					1							5			15
Tverskaja obl.	1	4								5	7	7												14			19
Uljanovskaja obl.		1	1							2	4													4			6
Vladimirskaja obl.		4								4	3													3			7
TOTAL	41	70	24	0	2	4	9	0		150	187	35	0	0	1	1	4	3	1	0	0	1	12	245	0	0	395
PER CENT	10.4%	17.7%	6.1%	0.0%	0.5%	1.0%	2.3%	0.0%		38.0%	47.3%	8.9%	0.0%	0.0%	0.3%	0.3%	1.0%	0.8%	0.3%	0.0%	0.0%	0.3%	3.0%	62.0%	0.0%	0.0%	100%

4.2 Rabies cases per country and administrative units, 3rd quarter 2012 (continued)

01.07.12 - 30.09.12

Location	Domestic animals										Wildlife															bat	Human cases	total
	dog	cat	cattle	equine	goat sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer	other	subtotal					
TURKEY																												
Afyon	1								1														0			1		
Agri			3						3														0			3		
Ankara	2		3						5														0			5		
Ardahan			2						2														0			2		
Artvin	2								2														0			2		
Aydin	1	3	3						7														0			7		
Balikesir			3						3														0			3		
Bayburt	1		1						2														0			2		
Bingöl			5						5														0			5		
Çanakkale			4						4	1													1			5		
Diyarbakir	1	1	2						4														0			4		
Elazig	1		2						3														0			3		
Erzincan	3								3														0			3		
Erzurum	5	2	1						8														0			8		
Gaziantep	3								3														0			3		
Giresun	5	1	1						7													1	1			8		
Gümüşhane	1								1														0			1		
Içel	1	1							2														0			2		
Igdir	15		14		1				30														0			30		
Izmir	1		6		2				9	3													3			12		
K.Maras	1								1														0			1		
Kars	1								1														0			1		
Konya	1		5						6														0			6		
Kütahya			1						1	1													1			2		
Malatya		1	1						2														0			2		
Manisa	1		6						7														0			7		
Mus					1				1														0			1		
Ordu	1		1						2														0			2		
Sanliurfa	3		3	1					7														0			7		
Sirnak			3						3														0			3		
Tunceli			1						1														0			1		
Van			3	1					4														0			4		
TOTAL	51	9	74	2	4	0	0	0	140	5	0	0	0	0	0	0	0	0	0	0	0	1	6	0	0	146		
PER CENT	34,9%	6,2%	50,7%	1,4%	2,7%	0,0%	0,0%	0,0%	95,9%	3,4%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,7%	4,1%	0,0%	0,0%	100%		

4.2 Rabies cases per country and administrative units, 3rd quarter 2012 (continued)

01.07.12 - 30.09.12

Location	Domestic animals										Wildlife														bat	Human cases	total	
	dog	cat	cattle	equine	goat	sheep	pig	stray dog	other	subtotal	fox	raccoon dog	raccoon	wolf	badger	marten	other mustelides	other carnivores	wild boar	roe deer	red deer	fallow deer	other	subtotal				
UKRAINE																												
Avtonomnaya Respublika Krym		2								2	2														2			4
Bolynskaja o.		1								1	2														2			3
Cherkasskaja o.	4	7	4							15	8	1				1									10			25
Chernigovskaja o.	2	10	2		2					16	6	1		1		2							1		11			27
Chernovitskaja o.	1									1	3					1									4			5
Dnepropetrovskaja o.	6	10	2		2					20	11	1													12			32
Donetskaja o.	7	5	3							15	9				1									1	11			26
Ivano-Frankovskaja o.		1								1	6												1	7			8	
Khar'kovskaja o.	3	8	1							12	6					1								7			19	
Khersonskaja o.	1	12	6							19	2	1				1								4			23	
Khmel'nitskaja o.	1	5	1							7	11				1								1	13			20	
Kirovogradskaja o.	1	5	8	1	2					17	6	1				1								8			25	
Kyjev g.	1	1								2	1													1			3	
Kyevskaja o.	4	7								11														0			11	
Luganskaja o.	1	3	2							6	1	1												2			8	
L'vovskaja o.		1								1	5													5			6	
Nikolajevskaja o.	2	5	2							9	4					2								6			15	
Odesskaja o.	2	7	8		1					18	9	1				2							1	13			31	
Poltavskaja o.		1								1	3													3			4	
Rovenskaja o.		4								4	3				1									4			8	
Sumskaja o.	1	7	2							10	3					1								4			14	
Ternopol'skaja o.	4	1								5	6													6			11	
Vinnitskaja o.	4	5	5							14	18				1	1								20			34	
Zakarpatskaja o.	1	1								2														0			2	
Zaporozhskaja o.	3	11	6	1						21	13	1		1		1								16			37	
Zhitomirskaja o.	3	8	2							13	6					1								7			20	
TOTAL	52	128	54	2	7	0	0	0	0	243	144	8	0	2	4	15	0	0	0	0	0	0	5	178	0	0	421	
PER CENT	12,4%	30,4%	12,8%	0,5%	1,7%	0,0%	0,0%	0,0%	0,0%	57,7%	34,2%	1,9%	0,0%	0,5%	1,0%	3,6%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	1,2%	42,3%	0,0%	0,0%	100%	
SWITZERLAND + LICHTENSTEIN																												
Zürich										0														0		1	1	
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
PER CENT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	100%	

4.2 Trend tables

4.2.1 Comparison of the reporting quarter (III/2012) with the previous quarter (II/2012)

NAME	Total			Wildlife			Domestic animals			Bats			Human		
	III 2012 (no.)	II 2012 (no.)	Difference	III 2012 (no.)	II 2012 (no.)	Difference	III 2012 (no.)	II 2012 (no.)	Difference	III 2012 (no.)	II 2012 (no.)	Difference	III 2012 (no.)	II 2012 (no.)	Difference
Albania	2		2				2		2						
Austria															
Belarus	114	98	16	60	53	7	53	45	8	1		1			
Belgium															
Bosnia - Hercegovina	1	1		1	1										
Bulgaria															
Croatia	61	30	31	49	26	23	12	4	8						
Cyprus															
Czech Republic															
Denmark															
Estonia															
Finland															
France	8		8							8		8			
Germany	8	5	3							8	5	3			
Greece															
Hungary	1		1							1		1			
Iceland															
Ireland															
Italy															
Latvia															
Lithuania		1	-1					1	-1						
Luxembourg															
Macedonia															
Malta															
Moldova	36	27	9	6	4	2	30	23	7						
Montenegro															
Norway															
Poland	68	32	36	61	23	38	6	8	-2	1	1				
Portugal															
Romania	70	87	-17	40	55	-15	30	32	-2						
Russian Federation	395	365	30	245	197	48	150	166	-16					2	-2
Serbia		1	-1		1	-1									
Slovak Republic															
Slovenia		1	-1		1	-1									
Spain	2	1	1				2		2		1	-1			
Sweden															
Switzerland + Lichtenstein	1		1										1		1
The Netherlands	4	2	2							4	2	2			
Turkey	146	148	-2	6	29	-23	140	119	21						
Ukraine	421	282	139	178	96	82	243	186	57						
United Kingdom		1	-1											1	-1
TOTAL	1338	1082	256	646	486	160	668	584	84	23	9	14	1	3	-2

Wildlife: excluding bats

III/2012 (no.), II/2012 (no.): number of cases

Difference: no. of cases in III/2012 minus cases in II/2012

4.2.2 Comparison of the reporting quarter (III/2012) with the same quarter of the previous year (III/2011)

NAME	Total			Wildlife			Domestic animals			Bats			Human		
	III 2012 (no.)	III 2011 (no.)	Difference	III 2012 (no.)	III 2011 (no.)	Difference	III 2012 (no.)	III 2011 (no.)	Difference	III 2012 (no.)	III 2011 (no.)	Difference	III 2012 (no.)	III 2011 (no.)	Difference
Albania	2		2				2		2						
Austria															
Belarus	114	292	-178	60	194	-134	53	97	-44	1		1		1	-1
Belgium															
Bosnia - Hercegovina	1	7	-6	1	4	-3		3	-3						
Bulgaria															
Croatia	61	55	6	49	53	-4	12	2	10						
Cyprus															
Czech Republic															
Denmark															
Estonia															
Finland															
France	8	5	3					1	-1	8	4	4			
Germany	8	5	3							8	5	3			
Greece															
Hungary	1	2	-1							1	2	-1			
Iceland															
Ireland															
Italy															
Latvia															
Lithuania		1	-1					1	-1						
Luxembourg															
Macedonia		1	-1		1	-1									
Malta															
Moldova	36	7	29	6	3	3	30	4	26						
Montenegro		4	-4		3	-3		1	-1						
Norway															
Poland	68	47	21	61	32	29	6	12	-6	1	3	-2			
Portugal															
Romania	70	64	6	40	42	-2	30	22	8						
Russian Federation	395	404	-9	245	208	37	150	191	-41					5	-5
Serbia		5	-5		4	-4		1	-1						
Slovak Republic															
Slovenia															
Spain	2	1	1				2		2		1	-1			
Sweden															
Switzerland + Lichtenstein	1		1										1		1
The Netherlands	4		4							4		4			
Turkey	146	83	63	6	12	-6	140	71	69						
Ukraine	421	248	173	178	103	75	243	144	99		1	-1			
United Kingdom															
TOTAL	1338	1231	107	646	659	-13	668	550	118	23	16	7	1	6	-5

Wildlife: excluding bats

III/2012 (no.), III/2011 (no.): number of cases
 Difference: no. of cases in III/2012 minus cases in III/2011

* no data

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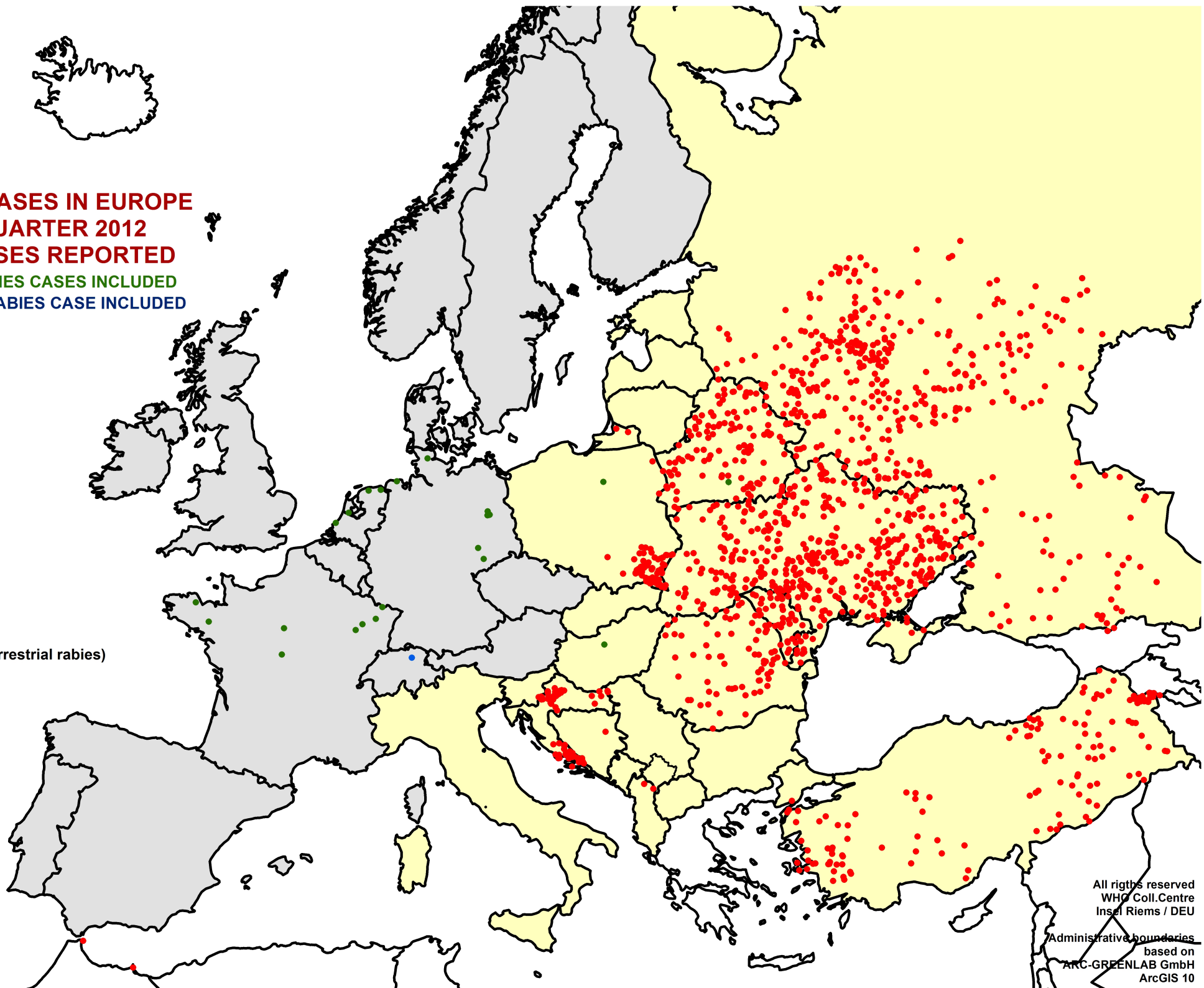
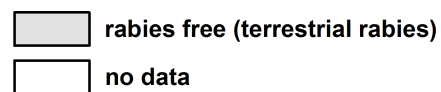
RABIES CASES IN EUROPE

3rd QUARTER 2012

1338 CASES REPORTED

23 BAT RABIES CASES INCLUDED

1 HUMAN RABIES CASE INCLUDED



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